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DIAGNOSTIC PERFORMANCE OF 320-ROW MULTIDETECTOR COMPUTED TOMOGRAPHY CORONARY ANGIOGRAPHY FOR THE NON-INVASIVE MANAGEMENT OF PATIENTS PRESENTING WITH SUSPECTED ACUTE CORONARY SYNDROME

ACC Poster Contributions
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Session Title: CT Coronary Angiography - Diagnostic Accuracy
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Background: The diagnostic accuracy of novel 320-row multidetector computed tomography angiography (CTA) in the evaluation of significant coronary artery disease (CAD) in patients presenting with suspected acute coronary syndrome (ACS) has not been reported previously. Therefore, the purpose of the current study was to evaluate the diagnostic accuracy of 320-row CTA in the identification of significant stenosis in patients presenting with suspected ACS. In addition, clinical outcome during follow-up in relation to CTA findings was assessed.

Methods: A total of 90 patients with suspected ACS underwent CTA and invasive coronary angiography. All CTA scans were evaluated for the presence of significant stenosis (≥50% luminal narrowing) by a blinded expert, and results were compared with quantitative coronary angiography. To assess clinical outcome, the following events were recorded: cardiac death, non-fatal infarction, and unstable angina requiring revascularization.

Results: Five patients were excluded from initial analysis due to non-diagnostic image quality. In the remaining 85 patients, sensitivity, specificity, and positive and negative predictive values to detect ≥50% luminal narrowing (patient basis) were 100, 87, 93, and 100%, respectively. During follow-up (median 13.9 months, 25-75th percentile: 7.5-19.1 months), an event occurred in 4 patients (4.7%). In the 59 patients with significant stenosis on CTA, non-fatal myocardial infarction occurred in 1 patient and 2 patients were revascularized because of unstable angina. Importantly, in patients without significant stenosis on CTA, no cardiac deaths or myocardial infarctions occurred and only 1 patient underwent revascularization due to unstable angina.

Conclusion: In patients presenting with suspected ACS, an excellent diagnostic accuracy for the non-invasive assessment of significant CAD was demonstrated. Importantly, a negative CTA predicted a low rate of adverse cardiovascular events and favorable outcome during follow-up.